

09/955,517

G0228

REMARKS

Claims 1, 2, 4-20 and 25 are currently pending in the subject application and are presently under consideration. Applicants' representative appreciates the entry of amendments to claims 1, 2, 4-14, 16-20 and 25. Also, two Terminal Disclaimers, which are being filed currently herewith utilize the official USPTO forms per Examiner's request. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments herein.

**I. Rejection of Claims 1, 2, 4-20, and 25 Under 35 U.S.C. §102(b)**

Claims 1, 2, 4-20, and 25 stand rejected under 35 U.S.C. §102(b) as being anticipated by Latos (US Patent No. 4,208,240). It is respectfully requested that this rejection be withdrawn for at least the following reason. Latos does not teach or suggest each and every element of the subject claims.

A single prior art reference anticipates a patent claim only if it expressly or inherently describes each and every limitation set forth in the patent claim. *Trintec Industries, Inc., v. Top-U.S.A. Corp.*, 295 F.3d 1292, 63 U.S.P.Q.2d 1597 (Fed. Cir. 2002); *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the ... claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Independent claim 1 (and similarly independent claims 15 and 25) has been amended herein to recite a system for *measuring* the etching of features (*e.g.* apertures) associated with alternating aperture phase shift mask (AAPSM) fabrication utilizing a light based measuring system. (*See* page 4, lines 29-31). In general, the *measuring* system emits light onto the mask surface, the light reflected from the one or more apertures is indicative of at least one parameter (*e.g.* dimension) of the mask fabrication process (*e.g.* depth of opening, width of opening, trench wall slope). (*See* page 5, lines 14-16). The depth, width and/or trench wall angles are important to the fidelity of the image transfer process due to the effects on phase shifting and diffraction of the light.

09/955,517

G0228

(See page 5, lines 17-18). Thus, *measuring* the depth, width and/or trench wall angles of the apertures in the mask enables fabrication of higher quality complementary phase shift masks as compared to conventional systems. (See page 5, lines 19-21). Latos does not teach or suggest a *measurement system* that is employed to measure the *feature parameters* of apertures on an AAPSM, as recited in the subject claims. Rather, Latos discloses a system that obtains *reflectivity* of a substrate and discontinues etching after a *pre-determined time* has been reached.

In particular, the system disclosed in Latos does not disclose *measuring feature parameters* as recited in the subject claims. Instead, Latos discloses a sensor that determines the *reflectivity* of a substrate while the substrate is being etched. Latos utilizes a sensor (e.g. derivative detector) having a variable timer that continuously samples the *reflected light* and provide a control signal in response to a predetermined change in the characteristics of the *light reflected*, which is used to terminate the plasma etch process before an overetch condition occurs. Latos does not teach or suggest *measuring feature parameters* regardless of surface *reflectivity*, as recited in the subject claims.

In the Advisory Action dated October 28, 2003, Examiner states Latos discloses, "the end point of etching in the apparatus of Latos is a [sic] measured by monitored [sic] a change in amplitude of the measured signal which is *indicative of the depth of the etched layer*." Applicants' representative respectfully disagrees. Merely monitoring a change in reflectivity of a surface does not measure depth (e.g., feature parameter) as recited in the subject claims. Rather Latos employs "a timer to...provide a *control signal in response to a predetermined change in the characteristics of the light reflected*", and thus does not teach or suggest *measuring a feature parameter* as recited in the subject claims. For example, if the speed of an etching process varies, equivalent layer depths can cause surface reflectivity to change at different times. Thus, under Latos, measuring the depth of layers is dependent on the speed of the etching process and is unreliable as a feature parameter measurement tool. In contrast, the subject invention does not rely on "a predetermined change in the characteristic of the light reflected."

09/955,517

G0228

In addition, Latos employs a *timer* to determine when an etch process is to be terminated. For example, after an etching process exposes an underlying substrate (with a *different reflectivity*), a *timer* is utilized to discontinue etch after the time threshold has been reached. In contrast, since the subject claimed invention does not rely on changes in substrate *reflectivity* to *measure feature parameters*, the need for a timer is mitigated.

In view of at least the foregoing, it is respectfully submitted that Latos neither anticipates nor suggests applicants' invention as recited in independent claim 1, 15 and 25 (and claims 3-14 and 16-20 which depend therefrom), and this rejection should be withdrawn.

## **II. Rejection of Claims 9-14 Under 35 U.S.C. § 103(a)**

Claims 9-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Latos (US Patent No. 4,208,240) in view of Niu *et al.* (Specular Spectroscopic scatterometry in DUV Lithography). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Claims 9-14 depend respectively from independent claim 1, and Niu *et al.* does not make up for the aforementioned deficiencies of Latos regarding claim 1. Accordingly, this rejection should be withdrawn.

## **III. Double Patenting**

Claims 1-20 and 25 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of copending Application No. 09/893,271. Also, claims 1-20 and 25 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13, 25, 26 of copending Application No. 09/893,186. Withdrawal of this rejection is respectfully requested in view of the two standard USPTO Terminal Disclaimers filed herewith.

09/955,517

G0228

**IV. Conclusion**

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

The Commissioner is authorized to charge the fee of \$440.00 to Deposit Account No. 50-1063, for a one-month extension of time and a Notice of Appeal.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

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